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ABSTRACT OF THE DISCLOSURE

Interferometers utilizing polarization preserving optical systems by plane polarized beams are deviated through preselected angles without changing their linear state of polarization. The interferometers utilizing such optical systems have a variety of applications and are particularly suitable for use in the field of distance measuring interferometry (DMI) to enhance measurement accuracy by reducing undesirable polarization effects that can introduce errors associated with an otherwise present undesirable polarization rotation found in classical retroreflectors. Prismatic optical elements are preferably used to construct assemblies which can include polarization beam splitting coating arrangements and/or birefringent materials to enhance the extinction ratio between orthogonally polarized beams propagating through such systems.